NATURA JURNAL ILMU ALAM DAN SOSIAL
Vol.1, No.2 (February– 2026)
E-ISSN: 3110-1402
pp.52-59

Diversity of Gastropod Species on The Coast of The Legend Padelegans Village

Siti Norromlatur Rosyidah, Lukluk Ibana, Akhmad Fatir
Department of Bologi Education, Universitas Islam Madura, Indonesia
*Corresponding Author: rosyidahsitinorromlatur@gmail.com

Abstract: Pamekasan is one of the regencies on the island of Madura that has a long coastal area with basic substrates in the form of coral / rocky and sandy, one of which is The Legend Beach. The coastline provides unique characteristics for marine organism life in the intertidal zone. Gastropods are one of seven classes in the phylum Mollusca. Members of gastropods are found in the sea and freshwater, especially in the coastal intertidal zone. The study aimed to identify gastropods found in the intertidal zone of The Legend and classify each species found. This research is exploratory, descriptive research with a qualitative approach. The method in this study is in the form of a roaming method. They are followed by sampling at the research site. The determination of the station on The Legend's coastline taken represents the state of The Legend's coastline as a whole. Samples were taken at three predetermined stations. There are nine species belonging to group 6 families. Namely: Buccinidae, Neritidae, Patellidae, Cerithidae, Littorinidae, and Potamididae.

Article History
Received: August, 2023
Reviewed: October, 2023
Published: February, 2026

Key Words
Diversity, Gastropod, The Legend

How to Cite: Rosyidah, S.N., Ibana, L., Fatir, A. (2026). Diversity of Gastropod Species on The Coast of The Legend Padelegans Village. *NATURA: Jurnal Ilmu Alam dan Sosial*, *1*(2), 52–59.

INTRODUCTION

Indonesia has the largest archipelago in the world, namely 17,508 islands stretching from Sabang to Merauke, and has a vibrant biodiversity both on land and at sea. Vast waters surround Indonesia, so it has a very high biodiversity. The land area of Indonesia is 1,922,570 km². Indonesia's inland and archipelagic waters are 3,110,000 km² with a coastline of 108,000 km (BPS, 2019). Indonesia has a very diverse flora and fauna, including a variety of marine life. The diversity of marine life is very diverse and can represent all phyla of Indonesia and the Pacific region (Persulessy & Arini, 2019). Referring to the Marine Ecoregions of the World (MEOW), Indonesia's sea areas are divided into 12 marine ecoregions. It is located in the heart of the Coral Triangle, home to the world's richest marine biodiversity. Indonesia is famous for the diversity of its coastal ecosystems, which include 18% of the world's coral reefs, more than 70 genera, 500 species of coral, and other marine life (Huffard et al., 2012).

One of the long and very wide coastal areas is located on The Legend Pamekasan Madura's beach in Padelegans Village, Pademawu District, Pamekasan Regency, Madura. The length of the coastline in Pademawu District is 19 km (Ismail et al., 2022). *The Legend* Beach is located near Jumiang Beach and is also integrated with the UTM Salt Excellence Innovation Center (PUI) and the Pamekasan Sea Water Resources Management Installation building. The location of *The Legend* Beach is quite easy to find and reach because it is only about 15 km from the city centre (Safitri & Andriani, 2022).

Coastal is a transition between sea and land that is still influenced by tides, sedimentation, freshwater flow, and human activities. Environmental factors in this zone cause diversity in plant and animal organisms (A'saf et al., 2020). Coastal waters get enough

direct sunlight and can penetrate the bottom of water bodies. Coastal waters are also rich in nutrients because waters receive abundant nutrients from two places. This makes coastal areas a place where various ecosystems with high organic productivity occur (Sipahelut et al., 2020). In coastal environments, there are various places where biota and ecosystems are diverse. Marine biota and ecosystems provide economic benefits and ecological functions for the surrounding community (Abidin et al., 2021). Coastal areas are home to various marine life, including various molluscs. As a source of protein, molluscs, along with fish and shrimp, support coastal communities' consumption and food needs (Merly et al., 2022). Phylum Mollusca is divided into six classes: Gastropoda, Bivalves, Cephalopods, Aplacophores, Polypacopora, and Scapoda (Naderloo et al., 2015). Gastropods are the largest and most species-rich group of molluscs, comprising about 50,000 species. The emergence of gastropods as part of coastal areas is strongly influenced by coastal conditions, namely sandy or muddy. The existence of Gastropoda is essential to maintain the ecological balance of coastal areas because Gastropods are one of the early spreaders of decomposition (Elviana et al., 2016). In addition, gastropods also have important economic value for coastal communities (Dhengi, 2020).

Gastropods of unknown species have been found on *The Legend* Coast. Given the important role of Gastropods in the organism's food chain, as a balancer of coastal ecosystems, and the lack of knowledge about the existence of Gastropods in the coastal area of *The Legend* Beach. Therefore, it is necessary to research the various types of Gastropods found in the area to complete the inventory of Gastropod species (Bhuja et al., 2020). This study aimed to determine the types of gastropods found on the beach of *The Legend* Pamekasan.

RESEARCH METHOD

This research is exploratory, descriptive research with a qualitative approach. Exploratory research is a method of direct observation at the place of research. In addition, this research also includes descriptive research because the data to be collected is in the form of words and images, not emphasizing numbers but with more emphasis on processes than products (Sugiyono, 2017). The tools and materials used in this study are digital cameras for documentation; Gastropod identification books and iNature and Google Lens apps for identification; Stationery; roll meter; scissors; Cutters; plastic; and label paper. While the material used in this study is Gastropoda on the coast of *The Legend*.

Sampling was conducted at *The Legend* Coast of Padelegans Village, Pademawu District, Pamekasan Regency, in February 2023 with six samplings. The study began by determining the sampling station using the roaming method. Followed by sampling at the research site. The determination of the station on *The Legend's* coastline taken represents the state of *The Legend's* coastline as a whole. Samples were taken at three stations (Syakur, 2019). Station I is a coastline located in the mangrove area along the entrance to the coastline of *The Legend* Station II, a rocky area on the beach, and Station III is a coastal area in front of the beach. The samples taken were noticed and recorded morphological features of the Gastropods found. At the same time, take pictures as a whole. Identification was carried out by comparing samples from observations guided by the identification book Recent and Fossil Indonesian Shells by Bunjamin Dharma. In addition, sample identification also uses the iNature and Google Lens applications. Then the collected data is analyzed descriptively, tabulated, and presented as tables and figures 1.

NATURA JURNAL ILMU ALAM DAN SOSIAL
Vol.1, No.2 (February– 2026)
E-ISSN: 3110-1402
pp.52-59

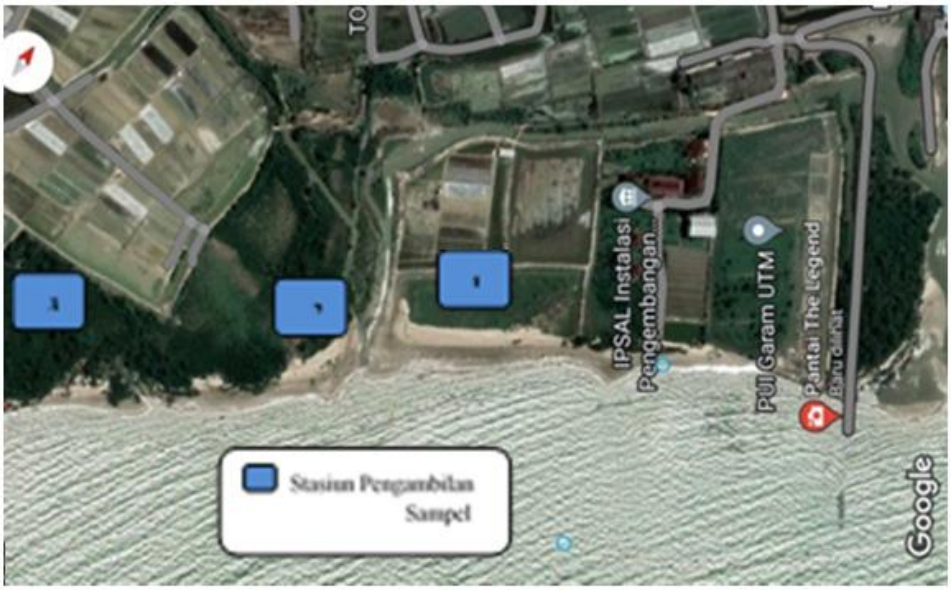

Figure 1. Sampling Station

RESULT AND DISCUSSION

Data Description

The results showed that gastropods found in the coastal area of *The Legend* Padelegans Village, Pademawu District, Pamekasan Regency amounted to 9 species grouped into six families. These species can be seen in Table 1.

Table 1. Types of Gastropods on The Legend's coastline

No	Familia	Species	Location		
			Station I	Station II	Station III
1	Buccinidae	*Engina armillata*	-	+	+
2	Neritidae	*Nerita (ritena) spengleriana*	+	+	-
3	Neritidae	*Nerita (ritena) chamaeleon*	+	+	-
4	Patellidae	*Patella caerulea*	-	+	-
5	Cerithidae	*Clypeomorus inflata*	+	-	-
6	Littorinidae	*Littoraria undulata*	+	-	+
7	Neritidae	*Vittoida variegata*	-	+	-
8	Cerithidae	*Clypeomorus subbrevicula*	-	+	-
9	Potamididae	*Telescopium telescopium*	+	-	+

Remarks : there is (+), none (-)

Based on Table 1 above, it can be seen that most types of gastropods are found at station II, which is a total of 6 (six) types consisting of *Engina armillata, Nerita (ritena) spengleriana, Nerita (ritena) chamaeleon, Patella caerulea, Vittoida variegata and Clypeomorus subbrevicula*. At the station I found 5 (five) types of gastropods consisting of *Nerita (ritena) spengleriana, Nerita (ritena) chamaeleon, Clypeomorus inflata, Littoraria*

undulate and *Telescopium telescopium*. While at station III, only 3 (three) types of gastropods were found consisting of *Engina armillata, Littoraria undulate,* and *Telescopium telescopium.*

The results of research on the types of gastropods on the coast of *The Legend* show that there are nine types of gastropods, consisting of *Engina armillata, Nerita (ritena) spengleriana, Nerita (ritena) chamaeleon, Patella caerulea, Clypeomorus inflate, Littoraria undulate, Vittoida variegate, Clypeomorus subbrevicula,* and *Telescopium telescopium*. Furthermore, of the nine types of gastropods classified into six families: Buccinidae, Neritidae, Patellidae, Cerithidae, Littorinidae, and Potamididae.

Description of the types of gastropods found

Engina armillata

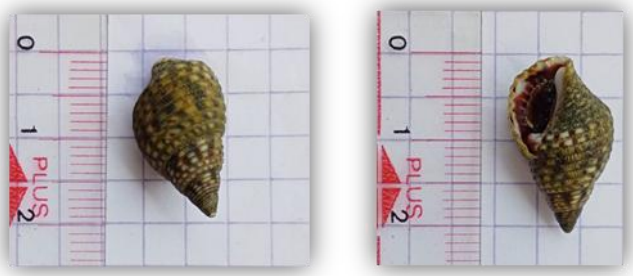

Figure 2. *Engina armilata*

Engina armilata is a species of the family Buccinidae. It has a hard shell, a slightly elongated shell shape, and a tapered shell. The size of the shell ± 1.5 cm. The shell's texture is rough; the colour of the shell is white, with black stripes crisscrossing around the spine (Iqwanda, 2021). Its habitat can be in sandy areas, and some species live in boulders (Tan & Morton, 2018).

Nerita (ritena) spengleriana

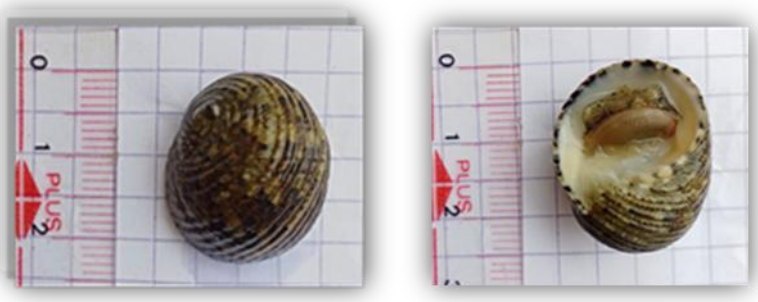

Figure 3. *Nerita (ritena) spengleriana*

Nerita (ritena) spengleriana is a family of Neritidae. This species has a relatively thinner operculum. The operculum is part of the protection of Nerite. The outer lip is the first line of defence against shell-destroying predators. The skin is very thick and toothed inside. In addition, operculum-enclosed openings are often small, especially in species in the intertidal zone (Vermeij & Hoeft, 2018).

NATURA JURNAL ILMU ALAM DAN SOSIAL
Vol.1, No.2 (February– 2026)
E-ISSN: 3110-1402
pp.52-59

Nerita (ritena) chamaeleon

Figure 4. *Nerita chamaeleon*

Nerita chamaeleon is a family of Neritidae. This species has morphological features of a light brown shell with irregular spots, dark brown, black, and white; the surface of the shell is coarsely serrated with spiral stripes, and the top of the shell is raised and high, serrated at the outer edge of the shell, the operculum is brown to dark brown, the outer surface of the cap is wavy and concave. Live by sticking to the surface of dead corals, rocks, and sandy bottoms (Desy et al., 2022).

Patella caeruela

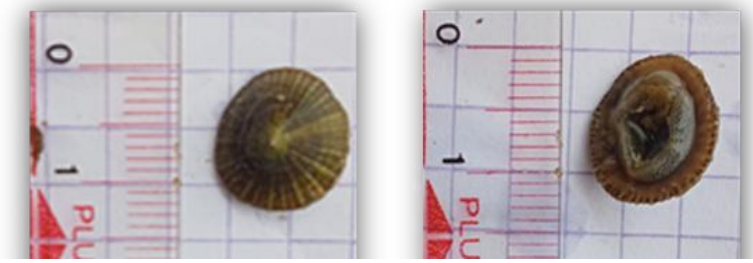

Figure 5. *Patella caerulea*

Patella caerulea is a member of the Patellidae family Gastropoda. This type is characterized by a cone-shaped shell with an average length and width of 5.5 cm and 5.8 cm, respectively. It has a brownish-black skin colour. It has no operculum. This species can be found in rocky substrates. *Patella caerulea* is a member of the Patellidae family Gastropoda. This type is characterized by a cone-shaped shell with an average length and width of 5.5 cm and 5.8 cm, respectively. It has a brownish-black skin colour. It has no operculum. This species can be found in rocky substrates (Desy et al., 2022).

Clypeomorus inflata

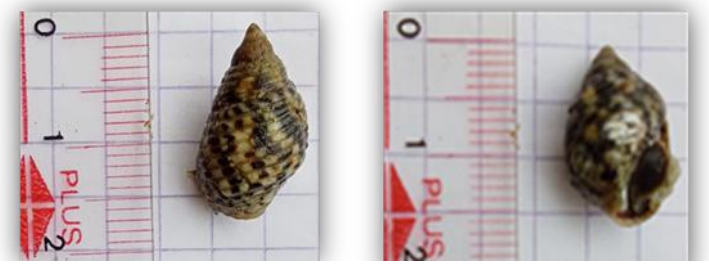

Figure 6. *Clypeomorus inflata*

NATURA JURNAL ILMU ALAM DAN SOSIAL
Vol.1, No.2 (February– 2026)
E-ISSN: 3110-1402
pp.52-59

Clypeomorus inflata is a family of Cerithidae. The type of Clypeomorus inflates is found on rocky beaches because this species has been able to adapt and adapt to life in rocky coastal environments. Clypeomorus bifasciata can stick to the crevices of stones. Clypeomorus inflata lives in small holes that gather to avoid heat and drought (Abukasim et al., 2022).

Littoraria undulata

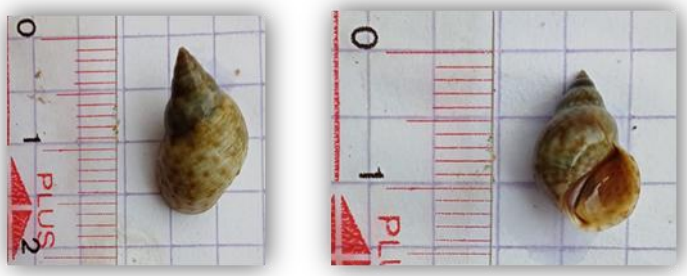

Figure 7. *Littoraria undulata*

The tip is pointed, the size of the shell is relatively small, and its size varies between 1.5-2 cm. The colour of the shell is a combination of brown and partly purple at the end of the shell. The opening is oval, and the outer lip is brownish-yellow (Iqwanda, 2021). The movement of these organisms is slow and tends to settle in specific ecosystems (Herviory et al., 2019).

Vittoida variegate

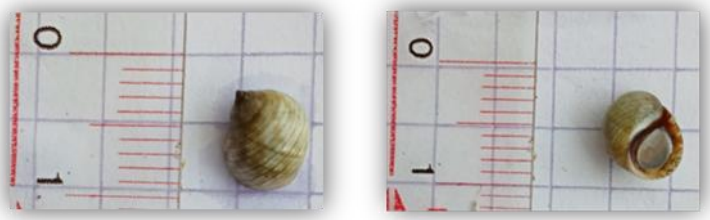

Figure 8. *Vittoida variegate*

Vittoida variegate is a family of Neritidae. This species can survive at water temperatures of 28-32 °C reported that water temperatures above 40 °C have no real effect on mangrove ecosystem life. Because this organism is found in mangrove areas s (Imamsyah, A., Arthana, I.W., Astarini, I.A. 2020)

Clypeomorus subbrevicula

Figure 9. *Clypeomorus subbrevicula*

Clypeomorus subbrevicula can live on rocky shores and sandy shores. This species of Clypeomorus is common on rocky coasts because it adapts and fits into such an environment. Clypeomorus can be found in small holes that collect to avoid heat and dryness (Tarihoran et al., 2020).

Telescopim telescopium

Figure 10. *Telescopium telescopium*

Telescopium telescopium is a family of Potamididae with bilaterally symmetrical bodies protected by strong cone-shaped heads and rounded shells. The outer layer of the shell of Telescopium telescopium is equipped with very narrow spiral lines and curved lines; the shell is turbid brown, purple-brown, and blackish brown (Ira et al., 2015)

CONCLUSION

Gastropods found in the coastal area of *The Legend* Padelegans Village, Pademawu District, Pamekasan Regency number 9 species grouped into six families. Most Gastropoda species are dominated by Neritidae, which number 3 species. Then from the family Cerithidae, which amounts to 2 species. In addition, each gastropod species from the families Buccinidae, Patellidae, Littorinidae, and Potamididae were found with one gastropod species. Gastropods found in the coastal area of *The Legend* Padelegans Village, Pademawu District, Pamekasan Regency number 9 species grouped into six families. Most Gastropoda species are dominated by Neritidae, which number 3 species. Then from the family Cerithidae, which amounts to 2 species. In addition, each gastropod species from the families Buccinidae, Patellidae, Littorinidae, and Potamididae were found with one gastropod species.

REFERENCES

A'saf, T. S., Al-Ajlouni, M. G., Ayad, J. Y., Othman, Y. A., & St Hilaire, R. (2020). Performance of six different soilless green roof substrates for the Mediterranean region. The Science of the Total Environment, *730*, 139182.

Abukasim, M., Kasim, F., & Kadim, M. K. (2022). Keanekaragaman dan Kelimpahan Gastropoda pada Ekosistem Mangrove Desa Kramat Kecamatan Mananggu Kabupaten Boalemo, Provinsi Gorontalo. *Journal of Marine Research*, *11*(3), 357–366.

Abidin, Z., Setiawan, B., Muhaimin, A.W. & Shinta, A. (2021). The role of coastal biodiversity conservation on sustainability and environmental awareness in mangrove

ecosystem of southern Malang, Indonesia. *Biodiversitas Journal of Biological Diversity*, *22*(2): 648-658.

Bhuja. (2020). Keanekaragaman Dan Kelimpahan Jenis Gastropoda Pada Ekosistem Mangrove Di Pantai Teluk Gurita Desa Dualauss Kecamatan Kakuluk Mesak Kabupaten Belu. *17*(2), 1–13.

Desy, W., Ardyati, D. P. I., & Kusrini. (2022). Identifikasi Jenis-Jenis Gastropoda di Zona Intertidal Perairan Pantai Desa Lontoi Kecamatan Siompu Kabupaten Buton Selatan. *Jurnal Penelitian Biologi Dan Kependidikan*, 1(1), 25–44.

Herviory, E. Y., Anwari, M. S., & Yani, A. (2019). Keanekaragaman Jenis Gastropoda di Hutan Mangrove Desa Mendalok Kecamatan Sungai Kunyit Kabupaten Mempawah. *Jurnal Hutan Lestari*, *7*(3).

BPS (2019). *Statistik Indonesia 2019*. Jakarta: Badan Pusat Statistik Indonesia.

Huffard, C. L., Erdmann, M. V., & Gunawan, T. (2012). Prioritas Geografi Keanekaragaman Hayati Laut untuk Pengembangan Kawasan Konservasi Perairan di Indonesia. *Kementerian Kelautan dan Perikanan dan Marine Protected Areas Governance. Jakarta-Indonesia*.

Ismail, M., Arisandi, A., & Farid, A. (2022). Estimasi Daya dukung Perairan Pesisir Kecamatan Pademawu Kabupaten Pamekasan untuk Kegiatan Budidaya Udang Vannamei Berdasarkan Laju Biodegradasi Limbah. *Jurnal Akuakultur Sungai dan Danau*, *7*(1), 21-26.

Iqwanda, Y. (2021). Keanekaragaman Jenis Gastropoda Di Zona Litoral Perairan Gunung Cut Kabupaten Aceh Selatan Sebagai Materi Pendukung Keanekaragaman Hayati Di Sman 2 Samadua. *Skripsi*. Fakultas Tarbiyah Dan Keguruan Universitas Islam Negeri Ar-Raniry Darussalam - Banda Aceh.

Merly, S. L., Mote, N., & Basik, B. (2022). Species Identification and Abundance of Mollusc Which is Utilized as Food Preference at Mangrove Forest Ecosystem, Merauke. 18(April), 55–65.

Naderloo, R., Ebrahimnezhad, S., & Sari, A. (2015). Annotated checklist of the decapod crustaceans of the Gulf of Oman, northwestern Indian Ocean. *Zootaxa*, *4028*(3), 397–412.

Persulessy, M., & Arini, I. (2019). Keanekaragaman Jenis Dan Kepadatan Gastropoda Di Berbagai Substrat Berkarang Di Perairan Pantai Tihunitu Kecamatan Pulau Haruku Kabupaten Maluku Tengah. *Biopendix: Jurnal Biologi, Pendidikan Dan Terapan*, *5*(1), 45–52.

Safitri, W., & Andriani, N. (2022). Analisis Potensi dan Strategi Pemasaran Destinasi Wisata Pantai. *Jurnal Kajian Ilmu Manajemen*, *2*(3), 299–308.

Sipahelut, P., Wakano, D., & Sahertian, D. E. (2020). Keanekaragaman Jenis Dan Dominansi Mangrove Di Pesisir Pantai Desa Sehati Kecamatan Amahai, Kabupaten Maluku Tengah. *Biosel: Biology Science and Education*, *8*(2), 160.

Sugiyono. (2017). Metode Penelitian Kuantitatif, Kualitatif Dan R&D (p. 329).

Tarihoran, S. N., Mei, S., Arsanti, A., Firmansyah, R., Fitria M, D., Ghazali, T. M., & Sinaga, D. (2020). Mollusca's Density and Distribution Pattern in Kalangan Mangrove Forest Ecosystem. *Jurnal Moluska Indonesia*, *5*(2), 42–49.

Tobing, I. S. L., & Matondang, I. (2018). Kondisi ekologis, potensi, dan pengembangan biodiversitas Indonesia untuk keseimbangan kehidupan di Bumi. *Prosiding seminar nasional Biodiversitas untuk kehidupan*. Jakarta, 21 April 2018.